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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,966

12/08/2005

Aya Imada

03500.017755.

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10/10/2008

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EXAMINER

TRAN, BINH X

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

10/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,966	Applicant(s) IMADA ET AL.	
	Examiner Binh X. Tran	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 16-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 16, the examiner interpret the limitation "wherein the residual film is removed during anodization without conducting an etching step thereafter" (emphasis added) as a negative limitation. However, the

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examiner is unable to find the proper support in the specification for this new negative limitation.

Claims 17-21 are rejected are rejected under 35 U.S.C. 112, first paragraph because they directly or indirectly depend on claim 16.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US 6,309,580) in view of Tamayoshi (JP 2000-315785).

Respect to claim 16, Chou discloses a process for producing a structure having holes, comprising:

providing a first member (substrate 18) having a patterning layer (20) (Fig 1A);

forming a protrusion-depression structure on the patterning layer 920) by impressing a second member (10) having a protrusions on the pattern layer, wherein the depression of the protrusion-depression structure contains a residue film of the material (Fig 1B-1C, col. 8 lines 5-45);

forming holes on the substrate by retaining the patterning layer in the depression of the protrusion-depression, to form holes (40) on the substrate, starting from the depression side.

Chou does not explicitly disclose the first member having a patterning layer comprises of a material soluble during anodization on the layer. However, Chou clearly teaches that the first member having patterning material contains methyl methacrylate (See, col. 8 lines 65 to col. 9 lines 20, Note: methyl methacrylate aka PMMA, same with applicant's patterning layer comprises of a material soluble during anodization). Soluble during anodization is a property of a material. According to the MPEP 2112.01, II, "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present". Thus, the examiner interprets Chou implicitly teaches the first member having a patterning layer comprises of a material soluble during anodization because Chou teaches to use the same material with applicants (i.e. PMMA).

Chou also fails to disclose the step of anodizing the substrate by immersing the substrate in an anodization solution without conducting an etching thereafter. However,

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Chou clearly teaches to form the hole on the substrate while retaining the patterning layer using wet chemical process (col. 8 lines 25-33). Tamayoshi teaches to anodize the substrate by immersing the substrate in an anodization to form holes on the substrate, wherein the hole (20) can be formed having arranged corresponding to the pattern (paragraph 0014-0048). Tamayoshi further disclose the first member comprises of a material (aluminum) that is soluble during anodization on a layer. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi by anodizing the substrate by immersing the substrate in an anodization solution (instead of wet chemical etching of Chou), because this technique provide a cheap, easy and short time process to create holes over a large substrate area (paragraph 0017). Since the step of anodization is capable of removing material and creating a hole, it would be obvious to replace the wet chemical removing of Chou by anodization of Tamayoshi because equivalent and substitution of one for the other would produce an expected result.

Respect to claim 17, Chou discloses the patterning layer (20) consists of a material (thermoplastic) that is deformed when impress with a second member (Fig 1b, read on “material having a less strength than the second member”). Respect to claim 18, Chou discloses the patterning material contains methyl methacrylate, polymethyl methacrylate (aka PMMA, col. 8 lines 65 to col. 9 lines 20; read on layer contains an alkoxide, see evidence in prior art made of record in previous office action).

Respect to claim 19, Chou discloses the height or depth of the protrusions of the second member is up to 200 nm (col. 8 lines 35-39). Chou further discloses the

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patterning layer (20) can has a thickness about 50 nm (col. 9 lines 12-15, 200 nm > 50 nm; read on "the height of the protrusions of the second member is larger than the thickness of the patterning layer). Respect to claim 20, Chou discloses the step of filling a function material into the holes (40) (col. 10 lines 45-50).

Respect to claim 21, Chou fails to disclose method for producing a magnetic recording medium wherein the function material is a magnetic material. Tamayoshi discloses a method for producing a magnetic device (abstract), including a magnetic recording medium (paragraph 0009, 0038) and the material is a magnetic material (paragraph 0027, 0090). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi forming a depositing a magnetic material into the holes to form magnetic recording medium, because this technique is cheap and easy (paragraph 0017).

Response to Arguments

7. The applicants states "In the present invention, it is not necessary to remove the remaining film existing in the depression of the patterning layer by a separate step as by etching, which feature simplifies the process of hole formation. See Example 7".

According to applicants, the example 7 of the specification implicitly provides support for the new negative limitation "wherein the residue film is removed during anodization without conducting an etching step thereafter". The examiner disagrees. The examiner clearly recognizes that the applicants disclose the step of anodization in example 7 of the specification. However, the applicants never exclude the step of etching thereafter. Contrary, in the example 7 the applicants clearly disclose the step of wet etching using

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phosphoric acid after the step of anodization in oxalic acid (See page 22 lines 21-27).

Further, the examiner is unable to find the support for the new negative limitation in all of the embodiments in the specification. It is noted that applicants use recites either the step of dry etching or wet etching many times in the specification (e.g. See abstract, pages 10 lines 16-17, page 11, pages 15 lines 15-20, pages 16 lines 3-9, lines 14-17, pages 22, etc).

The applicants further state "Even when combined, the concept of using a patterning layer of a soluble material to reduce steps would be unappreciated". The examiner disagrees. As discussed above since Tamayoshi clearly teaches the anodization step is capable of removing or patterning soluble material to create plurality of holes. Tamayoshi further discloses the anodization technique provide a cheap, easy and short time process to create holes over a large substrate area (paragraph 0017). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi by replacing the wet etching of Chou with anodization of Tamayoshi because technique provide a cheap, easy and short time process to create holes over a large substrate area.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh X Tran
Primary Examiner
Art Unit 1792

/Binh X Tran/
Primary Examiner, Art Unit 1792